

**STUDIES IN THE GENERA OF THE *DIOSMEAE* (RUTACEAE): 1.
AGATHOSMA ROSMARINIFOLIA (BARTL.) WILLIAMS COMB. NOV.**

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(*Compton Herbarium, Kirstenbosch*)

ABSTRACT

Examination of fresh material reveals that *Acmadenia rosmarinifolia* Bartl. should be transferred to the genus *Agathosma*.

UITTREKSEL

STUDIES VAN DIE GENERA VAN *DIOSMEAE* (RUTACEAE): 1. *AGATHOSMA ROSMARINIFOLIA* (BARTL.) WILLIAMS COMB. NOV.

'n Ondersoek van vars monsters toon dat *Acmadenia rosmarinifolia* aan die geslag *Agathosma* toegevoeg moet word.

DISCUSSION

The recent collection of fresh material in the Fernkloof Nature Reserve (Williams 1652 & 1736) has made possible a more detailed examination of this species. Ecklon & Zeyher (1835), one of whom was the first to gather this plant, wrongly identified it with *Barosma foetidissima* Bartl. & Wendl. It was found "Inter frutices et saxa (altit. IV) prope villas Swart et Marais ad montem Babylons Toorensberg (Caledon). Aug." Bartling (1843), citing *Barosma foetidissima* sensu Eckl. & Zeyh., placed this plant in the genus *Acmadenia* and named it *Acmadenia rosmarinifolia*. Bartling's closing remarks translated into English read "A species both unusual in appearance in this genus and truly singular in the internal floral parts, not in the least like any of its cogeners". His excellent description in *Linnaea* could scarcely be improved upon but he did, unfortunately, fail to observe that the ovary was three-chambered which fact alone points to the genus *Agathosma*. Other characters which definitely assign a species to the genus *Agathosma* are, firstly, the style should approximately equal the petals and, secondly the stigma should be simple. In this species the style equals the stamens in length but does not quite equal the petals. However by no means does it become as long as in *Macrostylis* nor remain as short as in *Acmadenia*. The stigma would appear to be capitellate rather than simple, but the difference is so slight as to be of no significance. In all other characters this species falls into *Agathosma*. The most obvious are:—flowers are aggregated in many-flowered heads; each flower is pedicellate with

Accepted for publication 18th January, 1973.

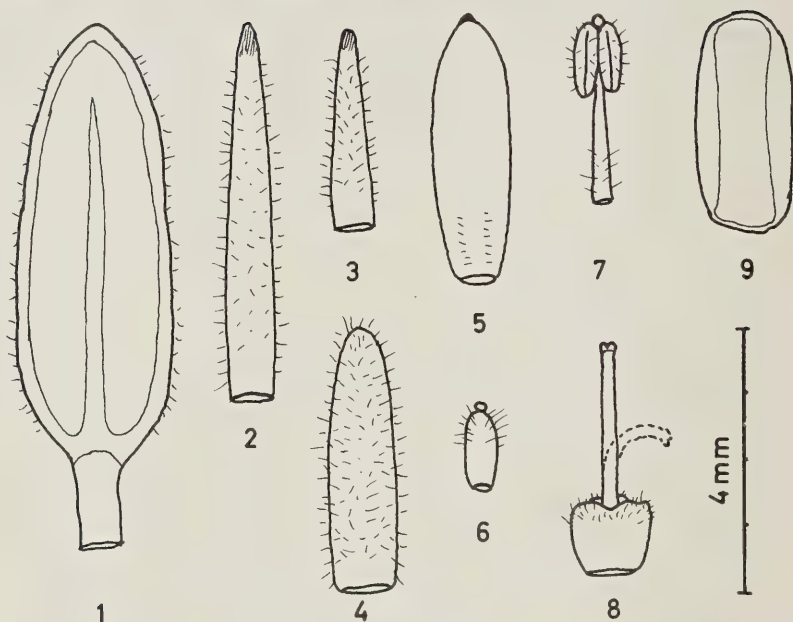


FIG. 1.

Agathosma rosmarinifolia. 1. Underside of leaf. 2. Bract. 3. Bracteole. 4. Calyx lobe. 5. Petal. 6. Staminode. 7. Anther. 8. Gynoecium. 9. Pollen.

two bracteoles at the base of the pedicel; the five staminodes, though small, are petaloid being fairly broad and pubescent with an apical gland; the style, the five filaments and the anthers are pubescent; the disc is not conspicuous and is exceeded at all times by the ovary; the ovary is tri-carpellate.

In his revision of the *Diosmeae* for the Flora Capensis, Sonder (1860) upheld Bartling's decision to place this species in *Acmadenia* but found it sufficiently different to place it in a category by itself and to state: "This, which has the habit of a *Barosma*, differs, by its capitate flowers and beardless petals, from others of this genus".

At first known only from Babilonstoringberg in the Caledon Division, this species was later found to occur on the Kleinriviersberg and on the Paardeberg, which are mountain ranges more to the south. Growing in more or less arid places amongst T.M.S. rocks at altitudes of from 500 to 1250m (1 500 to 3 800 feet), it flowers from June until November when ripening fruits may be found. Its presence in the field is betrayed by its extremely pungent odour, a most

penetrating smell, rather like garlic. In fact Lamb (1848 SAM), who collected this species in hills at Hartebeestriver, noted that it "has the odour of jackalls when fresh".

This species was apparently overlooked by Pillans (1950) in his revision of *Agathosma*.

Agathosma rosmarinifolia (Bartl.) Williams comb. nov.

Acmadenia rosmarinifolia Bartl. in *Linnaea* 17: 355 (1843).

Type: Babilonstoringsberg -[8/- Ecklon & Zeyher 813 (PRE, SAM).

Barosma foetidissima sensu Ecklon & Zeyher Enum. Plant.: 103 (1835) non *Barosma foetidissima* Bartl. & Wendl. (1824).

DESCRIPTION

Shrublets about 30 cm tall, erect, quite dense with many branches, single stemmed at base. *Branches* erect, slender, 2—3 chotomous, the bark greyish-brown, rough with leaf scars, at first clothed with a short erect pubescence later splitting and glabrescent. *Branchlets* about 5 cm long, erect, slender, yellow or purplish, densely clothed with a short erect white pubescence, densely foliate. *Leaves* crowded, spreading, *petiole* 1,5 mm long, 0,5—0,7 mm broad, pubescent, *blade* 5,5—6,5 mm long, 2—2,3 mm broad, linear-lanceolate or linear-oblong, somewhat obtuse, margins revolute, thick, gland-dotted and pubescent, upper surface dark green, glabrescent, under surface pale green nerved. *Flowers* 3—9 aggregated into terminal heads surrounded by the uppermost leaves. Each flower subtended by a *bract* 5,7 mm long, 0,7 mm broad, linear, narrowing towards the coloured apex, white below, ciliate, outer surface short-pubescent. *Bracteoles* 2, at the base of the pedicel, readily delapsing, about 3 mm long, 0,6 mm broad, pubescent, ciliate, pale in colour, apex green. *Pedicel* 1 mm long, slender, short-pubescent. *Calyx lobes* 5, about 4 mm long, 1 mm broad, linear, somewhat obtuse, greenish above, ciliate, short-pubescent, equalling the petals. *Petals* 5, 4 mm long, 1,2 mm broad, oblong-obovate, sub-obtuse, ciliolate, the apex slightly curved inwards with a callus, the nerve pubescent on the inside towards the base. *Staminodes* 5, 1,5 mm long, 0,5 mm broad, oblanceolate, ciliate, apex with a coloured gland. *Anthers* 5, before anthesis 1,1 mm long, 0,7 mm broad, oblong, clothed with short erect hairs and with a small sessile globose gland at the apex. *Filament* becoming 2,5 mm long, apex subulate, hairy below. *Pollen* obloid, 33 μ long, 15 μ diam. *Stigma* 3-fid, reddish, much the same diameter as the style when fresh. *Style* at first deflexed, eventually erect, lengthening to 2,3 mm, sparsely pubescent below. *Ovary* 3-chambered, exceeds the disc, about 0,7 diam., the apices somewhat pubescent. *Disc* not conspicuous, appears to exude nectar about the ovary.



FIG. 2.

Map showing distribution of *Agathosma Rosmarinifolia* (Bartl.) Williams.

Fruit 3-carpellate, each *carpel* 3 mm long, pubescent towards the apex, gland dotted, without horn or other process, hidden within the persistent calyx and petals. *Seed* 2,5 mm long, 1,3 mm diam., black, shining, somewhat bean-shaped.

SPECIMENS EXAMINED

CAPE—3419 (Caledon): (–AD) Babilonstoringberg, –/8/– *Ecklon & Zeyher* 813 (PRÉ, SAM), 24/2/1941 *Esterhuysen* 4967 (BOL, NBG); Hartebeesterivier, –/9/– *Lamb s.n.* (BOL, SAM); Kleinriviersberg between Stanford and Hermanus, –/9/1920 *Stokoe s.n.* (BOL 16883); Klein River Valley nr. Stanford –/9/1920 *Stokoe s.n.* (BOL 16884); Klein River Mts. near Stanford, 2000',

-/8/- without collector's name (PRE); Platberg, Hermanus, 2450', 3/6/1972 Williams 1652 (NBG), 1800', 19/11/1972 Williams 1735 (NBG). (-BC) Fairfield, 26/7/1962 Taylor 3641 (PRE, STE), 27/7/1962 Acocks 22486 (PRE).

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